Device Material Content

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Package: 49 caBGA with SnPb Solder Balls
Total Device Weight 0.126 Grams

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	2.46%	0.003			Silicon chip	7440-21-3	Die size: 1.7 x 2.9 mm
Mold	48.81%	0.062					Mold Compound composition:
			41.00%	0.052	Silica	60676-86-0	65 to 95% Fused silica filler (LSC uses 84% in our calculation)
			4.15%	0.005	Epoxy/Phenol Resin	-	4 to 28% Epoxy/Phenol resins (LSC uses 8.5% in our calculation)
			0.73%	0.0009	Metal hydroxide	-	0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation)
			2.44%	0.0031	Carbon black	1333-86-4	0.1 to 1.0% Carbon Black (LSC uses 0.5% in our calculation)
			1.46%	0.0018	Siloxanes	-	1-5% Siloxanes (LSC uses 3% in our calculation)
			0.49%	0.0006	Brominated Epoxy Resin	68928-70-1	<2% Brominated Epoxy Resin (LSC uses 1% in our calculation)
			0.24%	0.0003	Antimony Trioxide	1344-28-1	0.1-1% Antimony Trioxide (LSC uses 0.5% in our calculation)
			0.49%	0.0006	Antimony Pentoxide	1314-60-9	1% Antimony Pentoxide (LSC uses 1% in our calculation)
							Mold Compound Density between 1.8 and 2.1 grams/cc
D/A Epoxy	0.40%	0.0005			Silver filled epoxy		
			0.32%	0.0004	Silver (Ag)	7440-22-4	Die attach epoxy Density: 4 grams/cc
			0.08%	0.0001	Organic esters and resins	-	
Wire	1.14%	0.0014			Gold (Au)	7440-57-5	1.00 mil diameter; 1 wire per solder ball
Solder Balls	17.44%	0.022					
			10.99%	0.014	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			6.45%	0.008	Lead (Pb)	7439-92-1	
Substrate	23.08%	0.029					
			15.70%	0.0198	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			7.39%	0.0093	BT Resins	-	
Foil	6.66%	0.008			Copper (Cu)	7440-50-8	

Notes:

The values listed above are nominal values based on studies of representatives of this particular package type, and are believed to be as accurate as possible.

Constituent substances and proportions in epoxy materials are before curing.

The information provided above is representative of the package as of the date listed, and is subject to change at any time.

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